




Company Presentation

About ANDRITZ HYDRO



ANDRITZ HYDRO is a global supplier of electromechanical systems and services ("Water to Wire") for hydro power plants. The company is a leader in the world market for hydraulic power generation.

Andritz Group overview

Company

- Andritz AG in Graz, Austria (Group Headquarters)
- More than 150 production and service sites worldwide

Financials 2007

- Order Intake: 3,750 mio. EUR
- Sales: 3,283 mio. EUR
- Net Income: 136 mio. EUR
- Equity Ratio: 19.2%

Employees

- Approximately 12,000 worldwide

Products

- High-tech systems, machinery and services for the production of pulp and paper, steel, animal feed, and wood pellets
- Equipment for solid/liquid separation
- Turnkey electro-mechanical equipment for hydro power plants
- Pumps



A world market leader in most business areas

Production systems and services for:



PULP & PAPER

45% of Group Sales

Systems for production of all types of pulp and certain paper grades



HYDRO POWER

28% of Group Sales

Turnkey electro-mechanical equipment for hydro power plants; pumps



ROLLING MILLS & STRIPPROCESSING

12% of Group Sales

Systems for production and processing of cold-rolled stainless and carbon steel



ENVIRONMENT & PROCESS

11% of Group Sales

Systems for Mechanical and thermal solid/liquid separation of sludge



FEED & BIOFUEL

4% of Group Sales

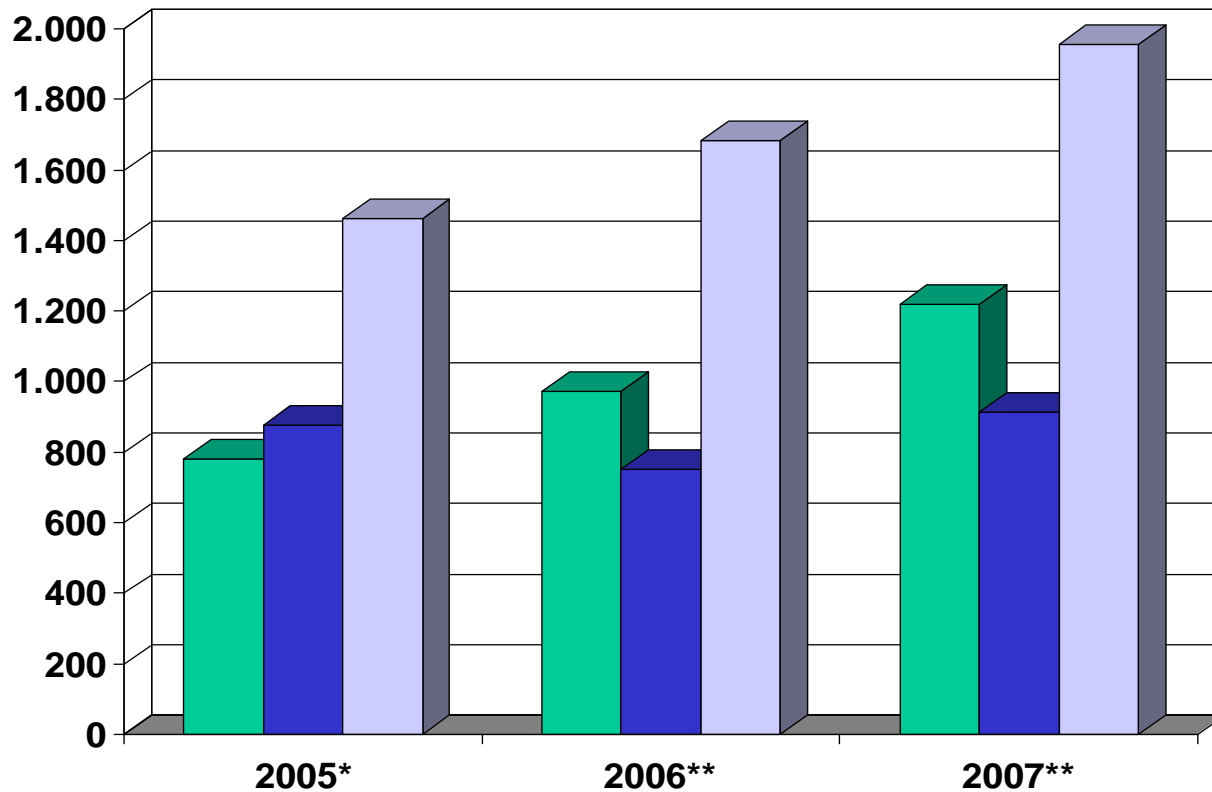
Systems for production of animal feed and wood/biofuel pellets

Organization



Data and Facts of ANDRITZ HYDRO

in mio. EUR



Order Intake: 1.216

Sales: 910

Order Backlog: 1.955

Employees: 4.390

■ Order Intake
■ Sales
■ Order Backlog

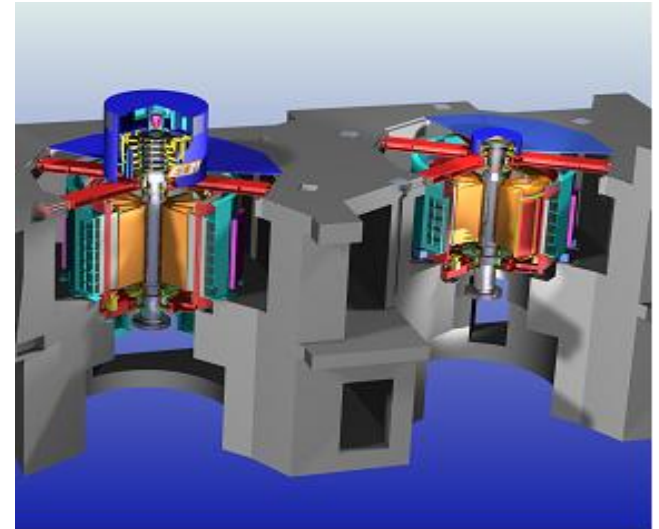
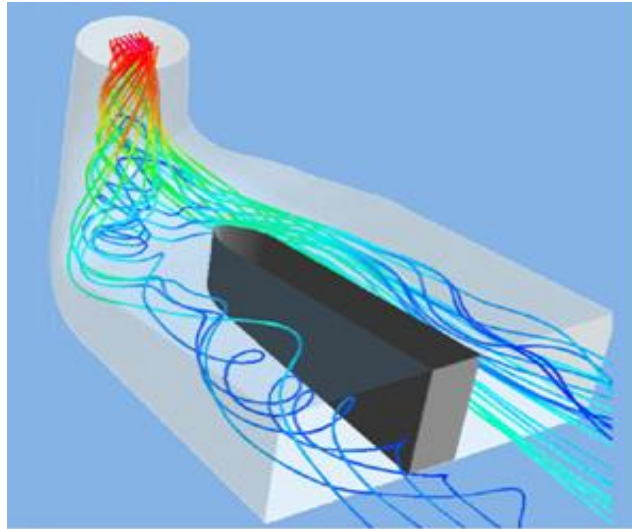
***) VA TECH HYDRO including combined cycle business**

****) Proforma figures for Andritz VA TECH HYDRO**

ANDRITZ HYDRO worldwide



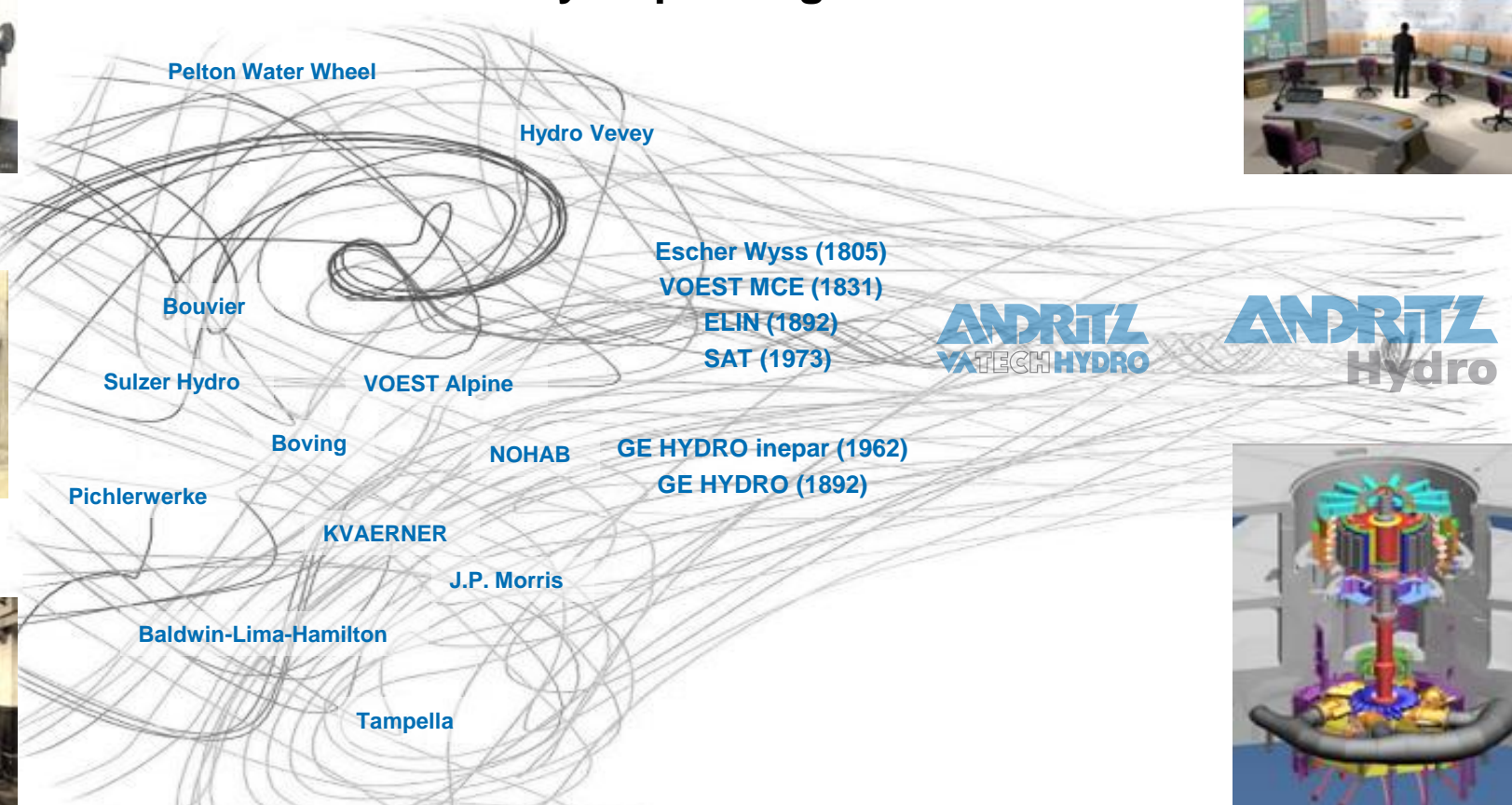
Our Experience



- More than 160 years of turbine experience
- Over 30,000 turbines (more than 400,000 MW) installed
- Over 110 years of experience in electrical equipment
- Complete range up to 700 MW
- Leading in Service & Rehabilitation
- World leader for Compact Hydro

Our History

More than 160 years of experience and knowledge
in the field of hydropower generation.



The pioneers created the foundation.

GE-Acquisition

With July-1st 2008 ANDRITZ HYDRO has integrated the hydropower business of GE.

400 employees, 9 locations, all intellectual property rights,
3 hydraulic laboratories and several manufacturing
facilities belongs now to the global structure.

6 countries
9 locations
400 employees

Bar-manufacturing by
Resin Rich Method
(Lachine/Canada)

X-Blade
Technology



Turbines
up to over 800 MW

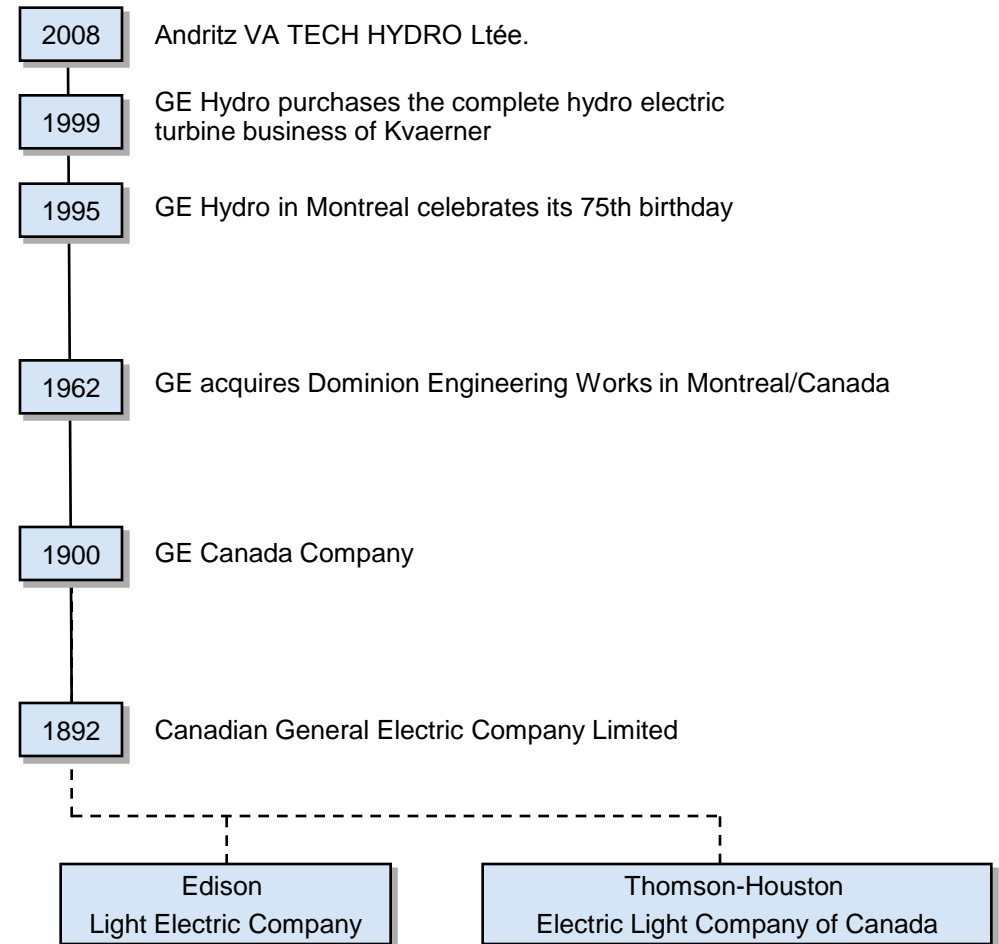
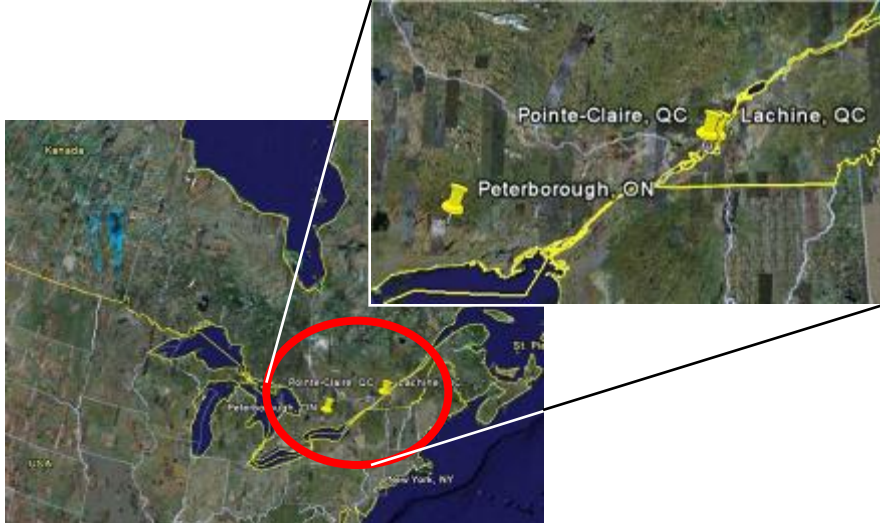
Generators
up to over 950 MVA

Together
more then 400 GW
of installed capacity

3 Hydraulic laboratories:
Araraquara / Brazil, Lachine/Canada,
Tampere/Finland

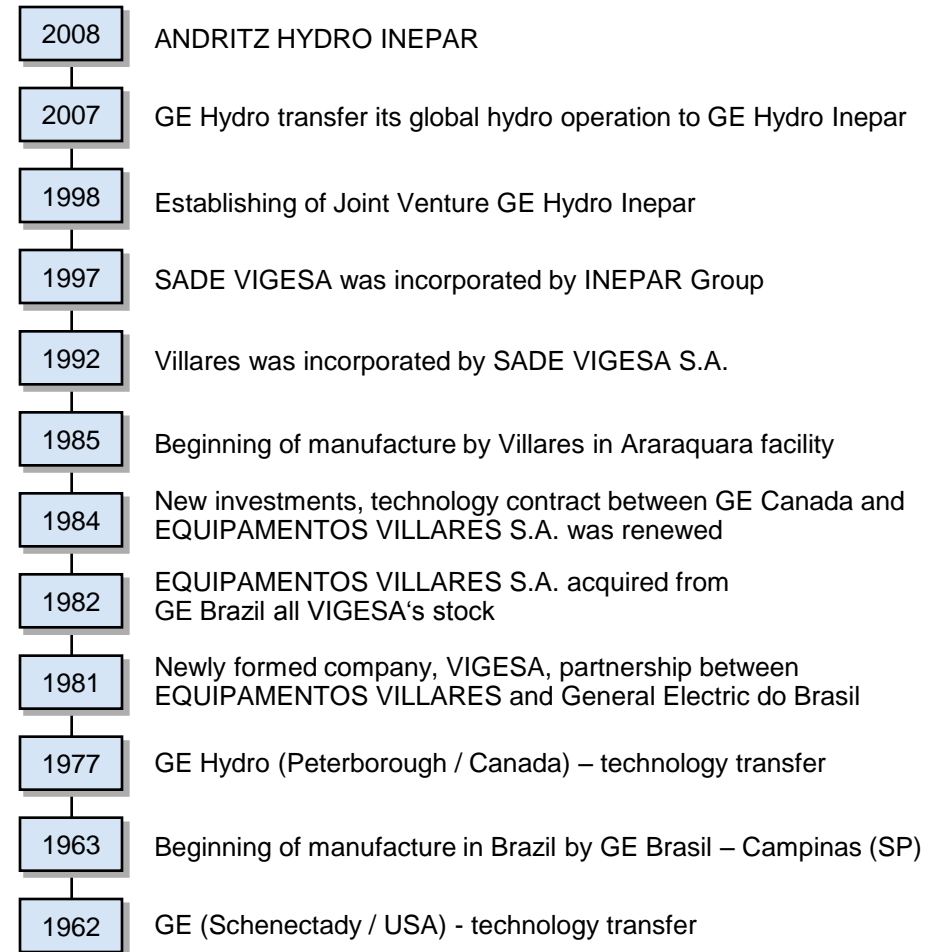
Canada - Peterborough, Lachine, Pointe Claire

- **ANDRITZ HYDRO**
- **approx. 200 employees**
- **additional locations in:**
 - **Great Britain – Doncaster**
 - **China - Huangzhou**



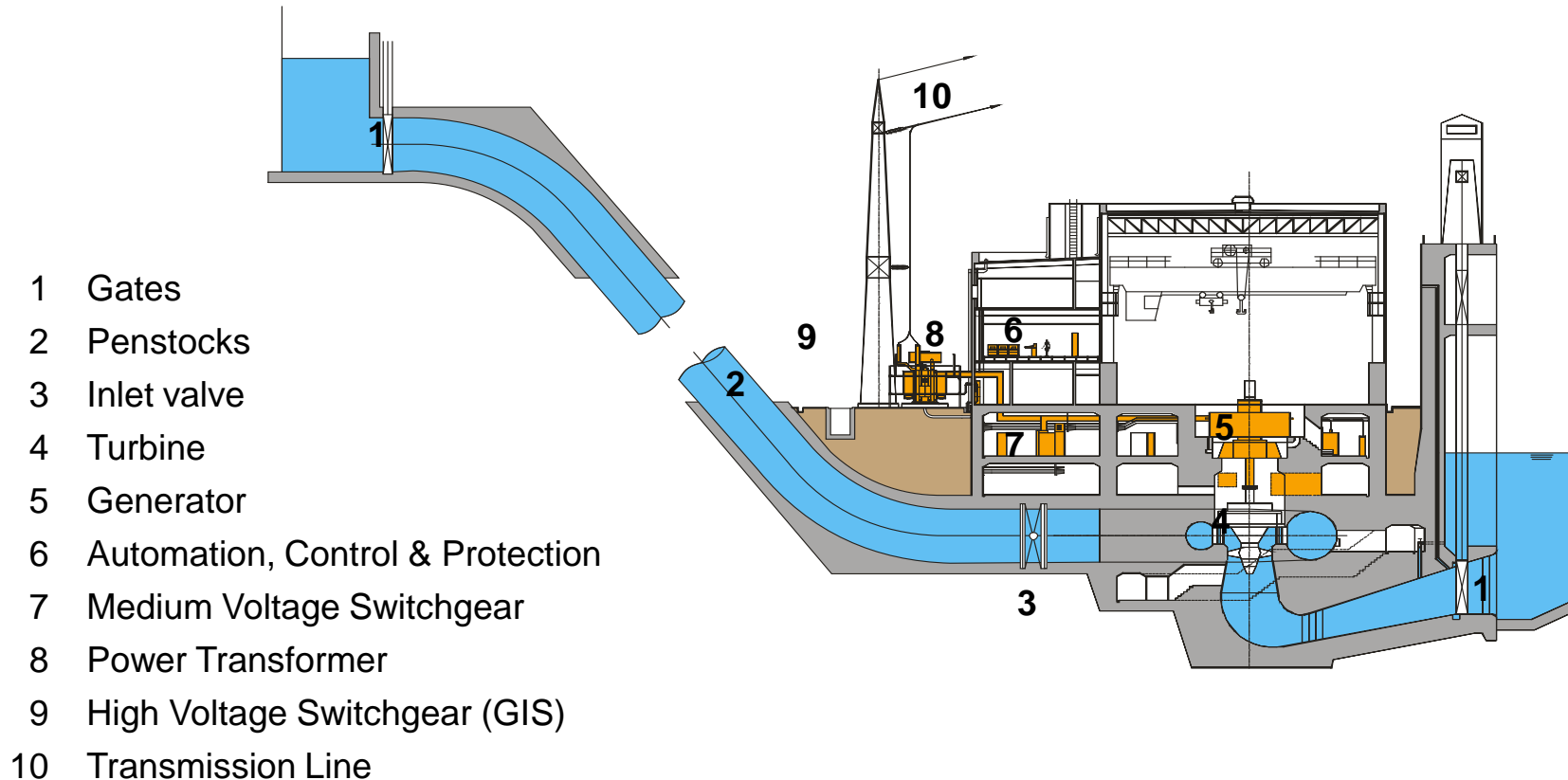
Brazil - Araraquara

- **ANDRITZ HYDRO INEPAR**
- **one of the largest heavy equipment plants in Latin America**
- **equipped with an universal hydraulics laboratory to test small-scale models and simulations for all turbine types**
- **the only laboratory of its kind in Brazil**



Water to Wire

Extensive know-how of products and systems
“Water to Wire” within ANDRITZ HYDRO



Quality



All operational Divisions and Subsidiaries are certified
according to the ISO 9001 Standard
Quality you can rely on!



EXPERIENCE

SOME PROJECTS IN CENTRAL AMERICA

Experience in Central America

Large Hydro



LAS VACAS II:

1 Pelton Turbine 20,3 MW - 2001

LAS VACAS I:

1 Pelton Turbine 20,1 MW - 1998

PUEBLO VIEJO (CHIXOY):

5 Pelton Turbines 72,0 MW - 1978

MARIA LINDA (AGUACAPA):

3 Pelton Turbines 31,7 MW - 1976

JURÚN MARINALÁ:

3 Pelton Turbines 23,4 MW - 1967



CERRÓN GRANDE:

1 Generator 96 MVA - 2001

GUAYABO U5 (5 DE NOVIEMBRE):

1 Francis Turbine 23,4 MW - 1964

GUAYABO (5 DE NOVIEMBRE):

4 Francis Turbines 14,7 MW - 1950



Guatemala



San Salvador

Experience in Central America

Large Hydro



SANTA BÁRBARA:

2 Francis Turbines 27,5 MW - 1969

2 Generators 31,5 MVA

ACP & BoP Systems



Nicaragua



EL CAJÓN:

4 Francis Turbines 91,7 MW - 1981



Honduras

Experience in Central America

Large Hydro



Costa Rica

PIRRÍS

2 Pelton Turbines 75,6 MW - 2007

2 Generators 89,4 MVA

LA GARITA:

2 Generators 23,4 MVA - 2000

PEÑAS BLANCAS

2 Francis Turbines 20,2 MW - 2000

2 Generators 22,2 MVA

ANGOSTURA

3 Francis Turbines 66,0 MW - 1997

RÍO VOLCÁN

1 Pelton Turbine 19,1 MW - 1996

DON PEDRO

1 Pelton Turbine 16,5 MW - 1995

SANDILLAL

1 Kaplan Turbine 16,5 MW - 1990

RÍO MACHO

1 Pelton Turbine 35,3 MW - 1975

TAPANTÍ (RÍO MACHO I)

2 Pelton Turbines 35,3 MW - 1969

Experience in Central America

Large Hydro: Penstock & Gates



SECACAO:

600 ton Penstock PN 525 m - 1996

XAYA PIXCAYA:

1900 ton Penstock PN 146 m - 1984

PUEBLO VIEJO:

2003 ton Penstock PN 150 m - 1981

LOS ESCLAVOS:

161 ton Penstock PN 128 m - 1964

Bifurcator



Guatemala



RÍO LINDO II:

3385 ton Penstock PN 500 m - 1975

RÍO LINDO:

4360 ton Penstock PN 500 m - 1968

Bifurcator



Honduras

Experience in Central America

Large Hydro: Penstock & Gates



GUAJOYO:

73 ton Penstock Presión PN 57 m - 1962
Stoplogs and lifting beams
Intake Racks



San Salvador

CERRÓN GRANDE:

4 Radial Gates 12,2 m x 15,9 m P=15,7 m - 1975
2 Radial Gates 7,0 m x 7,0 m P=27,5 m
2 Rolling Gates 4,0 m x 8,0 m P=63,1 m
Stoplogs and lifting beams
Intake Racks



PIRRÍS:

3300 ton Penstock PN 1100 m – 2007
Bifurcator



Costa Rica

SANDILLAL:

810 ton Penstock PN 70 m - 1989
Bifurcator

BIRRÍS I:

470 ton Penstock PN 481 m - 1987
Bifurcator

Experience in Central America

Service & Rehab



CACHÍ

2 Francis Turbines 41,3 MW - 2001

LA GARITA:

2 Francis Turbines 20,4 MVA - 2000

ECHANDI

1 Francis Turbine 4,9 MW - 1994

BIRRÍS III

1 Pelton Turbines 4,8 MW - 1991



Costa Rica



CARLOS FONSECA (SANTA BÁRBARA):

2 Francis Turbines 29,9 MW - 1999



Nicaragua

Experience in Central America

Service & Rehab



CERRÓN GRANDE:

2 Francis Turbines 99 MW - 2001

5 DE NOVIEMBRE:

4 Francis Turbine 15,7 MW - 1999

1 Francis Turbines 21,8 MW

GUAJOYO

1 Kaplan Turbine 19,6 MW - 1999



San Salvador



CHIXOY, AGUACAPA, JURÚN MARINALÁ:

Runners for Pelton Turbines

New generation Turbine Governors



Guatemala

Experience in Central America

Compact Hydro



EL RECREO:	2 Pelton Turbines 13,3 MW - 2005
MONTECRISTO:	2 Francis Turbines 6,7 MW - 2005
LAS VACAS III:	1 Pelton Turbine 6,2 MW - 2001
MATANZAS:	1 Pelton Turbine 10,5 MW - 1998
SAN ISIDRO:	2 Pelton Turbines 1,8 MW - 1998
SECACAO:	1 Pelton Turbine 15,9 MW - 1996
RÍO BOBOS:	1 Pelton Turbine 10,5 MW - 1993
PUEBLO VIEJO:	1 Pelton Turbine 0,6 MW - 1981
PUEBLO VIEJO:	5 Pelton Turbines 0,1 MW - 1980
EL PORVENIR:	1 Pelton Turbine 2,3 MW - 1966
RÍO HONDO:	2 Generators 1,5 MVA - 1956
ZUNIL:	1 Generator 1,3 MVA - 1954
SAN LUIS:	1 Francis Turbine 2,8 MW - 1927
PALIN:	1 Francis Turbine 1,2 MW - 1926



Guatemala

Experience in Central America

Compact Hydro



LOS NEGROS:	2 Francis Turbines	8,9 MW - 2005
COTE:	1 Francis Turbines	6,7 MW - 2000
TUIS:	1 Francis Turbine	1,9 MW - 1998
RÍO LAJAS:	2 Francis Turbines	5,5 MW - 1996
AGUAS ZARCAS I:	1 Francis Turbine	1,3 MW - 1994
AGUAS ZARCAS II:	2 Francis Turbines	6,6 MW - 1994
PLATANAR:	2 Francis Turbines	7,9 MW - 1993
EL ANGEL:	2 Francis Turbines	1,8 MW - 1991
BELÉN:	1 Francis Turbine	8,4 MW - 1989
CHIRRIPO:	1 Francis Turbine	4,9 MW - 1968
BIRRÍS III:	1 Pelton Turbine	4,6 MW - 1966
BIRRÍS II:	1 Pelton Turbines	2,7 MW - 1955



Costa Rica

Experience in Central America

Compact Hydro



GUAYABO AUX: 1 Francis Turbine 0,6 MW - 1950
SONSONATE: 1 Francis Turbine 1,0 MW - 1927



San Salvador



CUYAMEL: 2 Francis Turbine 4,1 MW - 2005
EL COYOLAR: 1 Francis Turbine 1,6 MW - 1998
NACAOME: 2 Francis Turbines 12,5 MW - 1994
1 Francis Turbine 3,1 MW
SANTA MARÍA: 1 Pelton Turbine 1,3 MW - 1983
EL CAJON AUX: 2 Francis Turbine 1,7 MW - 1981



Honduras

GO Central America

Why?

- **Growth of the market**
- **European products & services means:**
 - High-Tech, State-of-the-art solutions
 - High Standard of Safety, Quality & Health
 - Environmental Awareness; and ...
 - High Prices
- **Niches of market with no much competence**
- **Free Trade Agreement under negotiation (CA – UE)**
- **Clean Energy businesses: Austria needs urgently some reduction of GHG emission certificates (financing & support available)**

GO Central America

How?

- **Key issue: local agent / partner**
 - language
 - way of thinking
 - way of doing
 - bureaucracy
 - legal framework
 - fiscal policies, etc.
- **Austrian support:**
 - Financing
 - Information (WKÖ)

**Chose your agent not be
chosen by him/her !!!!**

Many thanks for your attention